

NCL 1A-7656

5173261



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D6104-007

Job Sheet 192804



Part No: D6104-007

Job Qty: 10 pcs

Part Name: Round Billet, 17-4



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 4/2/19

Job Tracking No:

Due Date: 4/29/19

Created By: Chantal Lavoie

Type: Stock

Description:

Note: DWG REV B

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier	Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier Lead Time	
100	Purchasing	10 pcs		4/29/19	0.00	0.00	Purchasing - 1	AT 1904/17
							Purchasing - 2	
							Purchasing - 3	
110	Packaging 2-1 - Receive - B4B	10 pcs		4/29/19	0.00	0.00	Packaging 2 - 1 - B4B	
							Packaging 2 - 2 - B4B	
							Packaging 2 - 3 - B4B	
							Packaging 2 - 5 - B4B	
							Packaging 2 - 4 - B4B	
							Packaging 2 - 6 - B4B	
							Packaging 2 - 7 - B4B	
							Packaging 2 - 8 - B4B	
							Packaging 2 - 9 - B4B	
							Packaging 2 - 10 - B4B	
							Packaging 2 - 11 - B4B	
							Packaging 2 - 12 - B4B	
							Packaging 2 - 13 - B4B	
							Packaging 2 - 14 - B4B	
							Packaging 2 - 15 - B4B	
							Packaging 2 - 16 - B4B	
							Packaging 2 - 17 - B4B	
							Packaging 2 - 18 - B4B	
							Packaging 2 - 19 - B4B	
							Packaging 2 - 20 - B4B	
							Packaging 2 - 21 - B4B	
							Packaging 2 - 22 - B4B	
							Packaging 2 - 23 - B4B	
							Packaging 2 - 24 - B4B	
							Packaging 2 - 25 - B4B	
							Packaging 2 - 26 - B4B	
							Packaging 2 - 27 - B4B	
							Packaging 2 - 28 - B4B	AT 1904/17

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P.T.O.

					Packaging 2 - 29 - B4B	
					Packaging 2 - 30 - B4B	
					Packaging 2 - 31 - B4B	
					Packaging 2 - 32 - B4B	
					Packaging 2 - 33 - B4B	
					Packaging 2 - 34 - B4B	
					Packaging 2 - 35 - B4B	
					Packaging 2 - 36 - B4B	
120	QC 18	10 pcs	4/29/19	0.00 0.00	QC 18 - 12	
					QC 18 - 14	
					QC 18 - 22	
					QC 18 - 25	
					QC 18 - 48	
					QC 18 - 58	DAS
					QC 18 - 61	61
					QC 18 - 9	9-89
130	Packaging 3-1 - Stock - B4B	10 pcs	4/29/19	0.00 0.00	Packaging 3 - 1 - B4B	37 -
					Packaging 3 - 2 - B4B	
					Packaging 3 - 3 - B4B	
					Packaging 3 - 4 - B4B	
					Packaging 3 - 5 - B4B	
					Packaging 3 - 6 - B4B	
					Packaging 3 - 7 - B4B	
					Packaging 3 - 8 - B4B	
					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	
					Packaging 3 - 12 - B4B	
					Packaging 3 - 13 - B4B	
					Packaging 3 - 14 - B4B	
					Packaging 3 - 15 - B4B	
					Packaging 3 - 16 - B4B	
					Packaging 3 - 17 - B4B	
					Packaging 3 - 18 - B4B	
					Packaging 3 - 19 - B4B	
					Packaging 3 - 20 - B4B	
					Packaging 3 - 21 - B4B	
					Packaging 3 - 22 - B4B	
					Packaging 3 - 23 - B4B	
					Packaging 3 - 24 - B4B	
					Packaging 3 - 25 - B4B	
					Packaging 3 - 26 - B4B	
					Packaging 3 - 27 - B4B	
					Packaging 3 - 28 - B4B	
					Packaging 3 - 29 - B4B	
					Packaging 3 - 30 - B4B	
					Packaging 3 - 31 - B4B	
					Packaging 3 - 32 - B4B	
					Packaging 3 - 33 - B4B	
					Packaging 3 - 34 - B4B	
					Packaging 3 - 35 - B4B	
					Packaging 3 - 36 - B4B	
140	QC 21 - SA	10 pcs	4/29/19	0.00 0.00	QC 21 - SA - 21	
					QC 21 - SA - 70	
					QC 21 - SA - 53	
Part Op 100 - (Purchasing) Issue P/O: <u>043090</u> b) Ø4.50" x 5.10" long Descriptions: 110 - (Receive & Inspect for Damage & Mat'l Certs) Ensure material certification is attached 120 - (QC18 In-Coming Inspection Material) Ensure Material certification comply to Dwg D6104 130 - (Identify as per dwg & Stock Location: _____) 140 - (QC21- Final Inspection - Work Order Release)						

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D6104-007P	17-4 SS Roundbar 4.50"Od	10 pcs (1 ea)	100-Purchasing	<u>5'172532</u>

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-Purchasing	D6104-007P	10	0	0

Part Specifications
Specifications could not be found.

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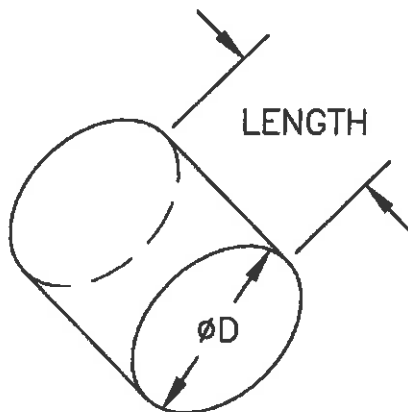


DESIGN [Signature]	DRAWN BY [Signature]	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4 SCALE NTS	
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED

02.11.29 [Signature]

SPECIFICATION CONTROL DRAWING



MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

PO043090



Supplier: MEC002-VU
Metaux Castle
P.O. Box 4090 Stn A
Toronto
ON
M5W OE9 Canada

PO No: PO043090

PO Date: 4/3/19

Due Date: 4/29/19

**Purchase Order
Revision:**

Revision Date:

Ship-To Contact: Lavole, Chantal
clavoie@dartaero.com

E-MAILED
APR 03 2019

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pymt Terms: Net 60

Freight Terms:

Special Comments:

Items

Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1	192799	D6101-003P		7075-T7351 2X6.25X7.875 Various STC's AS PER DWG D6101 REV. B SIZE: 7.875" X 6.250" X 2.00" THICK GRAIN DIRECTION ALONG 7.875" LENGHT MATERIAL: 7075- T7351 QQ-A-250/12 TOLERANCE AS PER QUOTE +.030"/-.000"	Firmed	-	4/29/19	20 pcs	0 pcs	20 pcs	\$38.82/pcs	\$776.40
2	192800	D6101-005P		7075-T7351 8.25X5.0X2.5 Various STC's AS PER DWG.D6101 REV.B SIZE: 5.00" X 8.250" X 2.50" THICK GRAIN DIRECTION ALONG 5.00" LENGHT MATERIAL: 7075- T7351 QQ-A-250/12 TOLERANCE AS PER QUOTE +.030"/-.000"	Firmed	-	4/29/19	20 pcs	0 pcs	20 pcs	\$40.54/pcs	\$810.80



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

PO043090



Items												
Line Item	Job	Part	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
3	192801	D6101-007P		7075-T7351 8.25X7.75X2.5 : Various STC's AS PER DWG D6101 REV. B MATERIAL: 7075-T7351 (QQ-A-250/12) SIZE: 7.750" X 8.250" X 2.50" THICK GRAIN DIRECTION ALONG: 7.750" LENGTH TOLERANCE AS PER QUOTE +.030"/-.000"	Firmed	-	4/29/19	40 pcs	0 pcs	40 pcs	\$61.72/pcs	\$2,468.80
4	192804	D6104-007P		17-4 SS Roundbar 4.50"Od AS PER DWG D6104 REV. B MATERIAL: 17-4 PH AS PER 17-4 (AMS 5643 OR AIS 630) MIN UTS = 170 KSI (38 HRC) TOLERANCE ON ALL DIMS IS +0.030/-0.0000	Firmed	-	4/29/19	10 pcs	0 pcs	10 pcs	\$68.53/pcs	\$685.30
Grand Total:											\$4,741.30	

Order Notes

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Procurement Quality Clauses

- A005 RIGHT OF ENTRY
- A007 FIRST ARTICLE INSPECTION (FAI) BY SELLER, (DOCUMENTATION MAINTAINED BY SUPPLIER)
- A012 CHEMICAL AND PHYSICAL TEST REPORTS
- A016 PERSONNEL QUALIFICATION
- A017 RAW MATERIAL IDENTIFICATION (AS APPLICABLE)
- A026 CERTIFICATION OF MATERIAL CONFORMANCE
- A041 QUALITY MANAGEMENT SYSTEM
- A042 DART NOTIFICATION BY SUPPLIER
- A043 RETENTION OF QUALITY DOCUMENT
- A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM
- A049 SUPPLIER AWARENESS

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A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:3875342

Ship From: A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped	F.O.B.	Freight Terms		Carrier		BOL No	
10-APR-19	ORIGIN	Prepaid		LOCAL_FLEET		3875342-6	

Shipment Details	Final Destination Branch - TOR
-------------------------	---------------------------------------

Order No	Line No	Item No	Description				
5450861	1	14998.MO	4.5000.RD.17CR-4NI.STAINLESS.RT.SOL TR.COND A.132.0000-156.0000 CUT TO 5.1 IN (+ .1250/- .0000 IN (MARK HT # ON PIECES)) - BAND SAW CUTTING SPECIFICATIONS: AMS 5643				
Purchase Order No		Part Number		Ordered Qty		Invoice Qty	
43090		YOUR ITEM NUMBER: D6104-007		10.00 PCS		10.00 PCS	
Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS					
Delivery No.	Mill/Source	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
122625775	NORTH AMERICAN STAINLESS			10			236.4263

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Date Printed: 10-APR-2019 03:56:12 PM



Castle Metals®

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 2 of 2

Reviewed by Authorized Castle Metals Representative:

Date:

Name:

S. Kato

APR 10 2019





North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

METALLURGICAL TEST REPORT

6870 Highway 42 East
Ghent, KY 41045-9615
(502) 347-6000

Certificate: 493422 3
Customer: 007209 001
Mail To:
CASTLE METALS
2150 ARGENTIA ROAD
MISSISSAUGA, ON L5N 2K7

Ship To:
CASTLE METALS
2150 ARGENTIA ROAD
MISSISSAUGA, ON L5N 2K7

Date: 3/20/2019 Page: 1
Steel: 630 (17-4)
Finish: HR

Your Order: 43808

NAS Order: PM 0102143 01

Heat Treat Code: 52,006

Corrosion:
Red Ratio: 3.7 :1

PRODUCT DESCRIPTION:

Round Bar, Hot Rolled, Annealed, Rough Turned
UNS S17400; EN 10204 3.1, ASTM A484/18, MACRO OK, AMS 5643 V
ASTM A564/13e1, AMS 2303/F, ASME SA564/13, ASTM F899/12B
SOL. ANNEALED @ 1900F MIN FOR 1 HR MIN. AND AIR COOLED TO RT
UT PER API6A PSL3, ASTM A388/S1 CRITERIA, UT PASSED
H900 MECH. PROPERTIES ARE CAPABILITY ONLY*

REMARKS:

COMPLIES W/REQUIREMENTS OF DFAR 252.225-7009 EU DIRECTIVE
2011/65/EU. RoHS. EAF+AOD+CC. NO WELD REPAIR. MELTED AND MFG
IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

Product Id	Skid #	Diameter	Size	Weight	-----Length-----	Mark	Pieces	Commodity Code
BK2145 6		4.5000		1,261	144.00	1	1	

ANAB, ISO/IEC 17025, Certificate# L2323

CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

Chemical Analysis per ASTM A751/14a

NAS Heat	CM	C %	CB %	CO %	CR %	CU %	MN %	MO %	N %	NI %
<u>B13Y</u>	US	.010	.218	.02	15.13	3.37	.80	.009	.026	4.24
		P %	S %	SI %	TA %	TI %				
		.016	.0136	.58	.0050	.0020				

MECHANICAL PROPERTIES

Product Id	1 d o i c r	HB No.	Grain No.	Ferrite %	TS-900CAP KSI	YS-900CAP KSI	EL-900CAP % 4D	RA-900CAP %	RC-900CAP No.	FREQ. No.
BK2145 6	R L	321.0	7.0	.19	200.11	180.29	12.63	41.65	41.0	.05



NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical
Dept. Mgr.

KRIS LARK

3/20/2019



North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

METALLURGICAL TEST REPORT

6870 Highway 42 East
Ghent, KY 41045-9615
(502) 347-6000

Certificate: 493422 3
Customer: 007209 001
Mail To:
CASTLE METALS
2150 ARGENTIA ROAD
MISSISSAUGA, ON L5N 2K7

Ship To:
CASTLE METALS
2150 ARGENTIA ROAD
MISSISSAUGA, ON L5N 2K7

Date: 3/20/2019 Page: 2
Steel: 630(17-4)
Finish: HR

Your Order: 43808

NAS Order: PN 0102143 01

Heat Treat Code: 52,006

Corrosion:
Red Ratio: 3.7 :1

PRODUCT DESCRIPTION:

Round Bar, Hot Rolled, Annealed, Rough Turned
UNS S17400; EN 10204 3.1, ASTM A484/18, MACRO OK, AMS 5643/V
ASTM A564/13e1, AMS 2303/F, ASME SA564/13, ASTM F899/12B
SOL. ANNEALED @ 1900F MIN FOR 1 HR MIN. AND AIR COOLED TO RT
UT PER API6A PSL3, ASTM A388/S1 CRITERIA, UT PASSED
H900 MECH. PROPERTIES ARE CAPABILITY ONLY*

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2011/65/EU. RoHS. EAF+AOD+CC. NO WELD REPAIR. MELTED AND MFG
IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

Product Id	Skid #	Diameter	Size	Weight	-----Length-----	Mark	Pieces	Commodity Code
BK2145 6		4.5000		1,261	144.00	1	1	

ANAB, ISO/IEC 17025, Certificate# L2323

CHEMICAL ANALYSIS CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

Chemical Analysis per ASTM A751/14a

NAS Heat	CM
B13Y	US

MECHANICAL PROPERTIES

Product Id	1 d o i c r	SEV. No.
BK2145 6	R L	.03



NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical
Dept. Mgr.

KRIS LARK

3/20/2019

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: D6101-007
 DATE: 19/04/15

PO / BATCH NO.: 00043010 / 5173261

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 10x
 QUANTITY INSPECTED: 10x
 QUANTITY REJECTED: ✓

THICKNESS ORDERED: 4.500"
 THICKNESS RECEIVED: 4.549"
 SHEET SIZE ORDERED: 5'-100"
 SHEET SIZE RECEIVED: 5'-220"

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	<u>N</u>	
CORRECT FINISH	<u>Y</u>	N	
CORROSION	Y	<u>N</u>	
CORRECT GRAIN DIRECTION	<u>Y</u>	N	
CORRECT MATERIAL PER M-DRAWING	<u>Y</u>	N	<u>AMS 5643</u>
CORRECT THICKNESS	Y	<u>N</u>	
PHOTO REQUIRED	Y	<u>N</u>	
CORRECT REF # TO LINK CERT	<u>Y</u>	N	<u>MT-B138</u>
CORRECT MATERIAL IDENTIFICATION	<u>Y</u>	N	
CORRECT M# ON THE MATERIAL	<u>Y</u>	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	<u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	<u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>DAS 61</u> DATE: <u>APR 17 2019</u>	SIGNED OFF BY: _____ DATE: _____		

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

Entered: LLDate: Oct 30/19

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

Route update only ☐NCR No. 19-7656Job: 192804Part No. D6104-007

DISPOSITION

Rework ☐Scrap ☐Use-as-is ☒

DEPARTMENT/PROCESS

Skid-tube ☐Machining ☐Large Fab ☐Cross tube ☐Small Fab ☐Finishing ☐Eng. (Non-AW) ☐Prod. Eng. Coord. ☐Rec/Store/Packaging ☐Engineering ☐Water Jet ☐Supplier ☒Quality ☐

Date:

APR 15 2019

Sequence #:

110-RECEIVING

QTY Affected:

10

MRB (QSI042)

DAS

9

9-89

19-04-15

DAS

9

9-89

19-04-15

Lead hand / Supervisor

QC / QA Coordinator

DAS

68

9-89

APR 15 2019

Description Work Order Deviation

- DRAWING SPECIFIES 5.10 +0.030/-0.000
ALL PARTS MEASURE 5.228", 0.128"
OVERTOLERANCE.

Disposition

Acceptable as is.

Extra material will be remove
during machining.

Root Cause

Operator ☐Manufacturing Process ☐Equip/Tooling ☐Handling/Preservation ☐Material ☒Product Improvement ☐Process Improvement ☐Human Factors ☐

FAULT CATEGORY

☐ Pressure/Forced☐ Bending☐ Crushing☐ Cracks☐ Crimp/Kink/Ripple/Wave/Twist☐ Marks/Chatter☐ Mislabeled☐ Contamination☐ Misaligned/off center☐ BOM/Route☐ Broken/Damage/Defect☐ Incomplete/Unclear Instructions☐ Drill Holes☐ Fit/Function☐ Power Loss/Surge☐ Folio/Program☐ Grain Direction☐ Weld☐ Wrong Stock Pulled☐ Out of Sequence☐ Off-set/Set-up☐ Positioned Wrong☒ Outside Tolerance☐ Drawing☐ Finish☐ Part Lost/Missing☐ Misread

Other/Details: